IN THE SPECIFICATION

Please enter the following substitute paragraphs in the specification:

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B1 This application is a continuation-in-part of U.S. Application Serial No. 09/562,595, filed May 1, 2000. This application claims the benefit of U.S. Provisional Application Serial No. 60/360,323, filed February 26, 2002, entitled Endovascular Grafting Device, which contents are incorporated herein by reference in its entirety.

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B2 FIG. 14A is a partial perspective view depicting the proximal end of a limb component of the present invention with an ~~internal~~ external proximal stent utilizing the alternate stent design shown in FIG. 13 and held in a compressed state by a sheath that is shown as transparent;

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B3 FIG. 14B is a partial perspective view depicting the proximal end of a limb component of the present invention with an ~~external~~ internal proximal stent utilizing the alternate stent design shown in FIG. 13 with the proximal cell portions extending beyond the proximal end of the limb component and held in a compressed state by a sheath that is shown as transparent;

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B4 FIG. 14C is a partial perspective view depicting the "umbrella" or grappling pattern produced when the sheath in FIG. 14~~A~~ B is retracted distally to expose the upper cell portions of the stent;

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FIG. 1 shows a limb component 80 that is one aspect of the present invention. The limb component has a proximal end 81 with a proximal stent 84, a distal end 82 with a distal stent 85, and graft material 83. The proximal stent 84 is located internal to the graft material and is self - expanding with a series of caudal hooks or barbs 86 which puncture the graft material of the main body limb portion ~~33~~ when the stent 84 is deployed. The proximal stent 84 is designed to be attached to a limb support portion 33, 34 of the main body component 30 of a bifurcated endovascular graft. (See FIGS. 3 and 4). The distal stent 85 is also self-expanding and is designed to be attached to the vessel wall to anchor the distal end 82 of the limb component 80. Although shown external to the graft material with a series of caudal hooks or barbs 86, the distal stent 85 can be located internal to the graft material and may be of any type known within the art. Note that the hooks or barbs 86 at the proximal end 81 are angled in the distal direction, which is the direction of blood flow in the vessel. This angling helps to ensure better attachment of the limb component 80 to the main body component 30. The barbs on the distal end 82 of the limb point opposite to the blood flow. When the limb component 80 is compressed for delivery, the hooks or barbs 86 of the stents 84, 85 are also at least partially compressed.

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In a preferred embodiment, the limb component ~~80~~ 180 proximal stent 84 is cut from a Nitinol tube using a laser beam and has five hooks 86 equally spaced around its circumference at 72 degrees apart. The stent 84 is heat - set for its final expanded diameter using a process known in the art, with the hooks 86 set at an approximately 45 degree angle using a inner mandrel and outer cylindrical tube, the stent 84 "electro polished", and the hooks 86 sharpened. The stent 84 is sutured inside the limb component ~~80~~ 180 graft material ~~83~~ 183 which has five holes 87 equally - spaced around its circumference. The holes 87, pre - punctured using a hot pin to melt the graft material ~~83~~ 183, or ultrasonically punched, allow the five stent hooks 86 to protrude through the

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graft material ~~83~~ 183 when the limb component 80 is compressed for delivery. When the limb component ~~80~~ 180 is deployed within the limb support portion 33, 34 of a main body component 30, the stent 84 will expand, thereby causing the hooks 86 to penetrate the graft material of the main body component 30, forming a seal and anchoring the limb component ~~80~~ 180 within the main body component 30. A balloon can also be used to set the hooks. A "tug" in the distal direction can also set the hooks.

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It is contemplated that tufting 92 can also be used where the seal between the limb component and main body component is achieved by traditional methods. For example, FIG. 6 depicts a limb component 580 with an external proximal stent 184 that is to be deployed within the limb support portion 134 of a main body component 130 with an internal distal stent 52. The seal is formed by the main body component 130 internal distal stent 52 that resists the expansion of the limb component 580 external proximal stent 184. Tufting 92 on the outside of the limb component 580 graft material 83 protrudes through the external proximal stent 184. Likewise, tufting 92 on the inside of the limb support portion 134 graft material protrudes through the internal distal stent 52. The tufting 92 will fills spaces between the stents 52, 184 and graft material as well as spaces between the two stents 52, 184, thereby promoting blood clotting, improving the seals, and reducing blood leakage. The location of the stents 52, 184 in FIG. 6 is intended for demonstration purposes only as it is contemplated that tufting 92 may be used to improve the seal anytime stents are used.

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FIG. 12B depicts the joint formed between the main body component 530 and limb component 80 using this method. The main body component 530 is deployed first. The flow of blood (indicated by the arrow) and the limb support portion 534 stents 152, ~~70~~ 171 keep a passageway open through which the limb component 80 is inserted. The limb component 80 is delivered in a compressed state and inserted into the limb support

portion 534 such that the distal end of the limb component 80 proximal stent 183 is proximal to the limb support portion 534 tapered middle portion 78. When the limb component 80 is deployed, the radial force of the proximal stent 183 forces the limb component 80 graft material 83 against the limb support portion 534 graft material and the tapered portion 78 prevents distal migration of the limb component 80. The resulting joint between the components is both mechanical, between the expanded stent 183 and tapered portion 78, and frictional, between the limb component 80 and limb support component 534 graft materials. Such a joint provides better resistance to distal migration of the limb component 80 than traditional methods, such as an entirely frictional joint, without deterioration or tearing of the graft material. It is contemplated that this method may be used to join any two components where the first - deployed component has a tapered middle portion and "bell - bottom" distal end and the second component, with a proximal support stent, is deployed within the first component such that the distal end of the stent is proximal to the tapered portion. Although FIGS. 12A and 12B depict external limb support portion stents 152, 171 and an internal limb component proximal stent 183, it is contemplated that the stents may be located either internal or external the graft material.

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FIGS. 16A and 16B show a limb component 780 with a self - expanding internal proximal stent 84 attached to the proximal end 81 of the graft material 83 with sutures 88 at only the most proximal and most distal ends of the stent such that an additional layer of graft material is formed where the stent has its widest opening between struts. This is the area most susceptible to the "parachute" effect caused when blood leaks between the joint formed between a proximal limb stent and main body component limb support portion distal stent, whereby the blood collects in the largest graft - to - graft area in the frame stent openings and fills like a parachute. The additional graft material in this area resists the tendency of blood to collect. The additional area of graft material may be formed by attaching the most proximal or most distal end of the stent to the graft material

with sutures and pulling the graft material inside itself to form an overlapping area 100 before attaching the other end of the stent to the graft material, thereby forming a fold of graft material around the circumference of the graft material which traverses the widest area between stent struts. It is contemplated that an additional area of graft material may also be utilized for the main body component limb support portion distal stent or for any type of vessel repair ~~the~~ that requires an implant seal.